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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,530	09/22/2003	John S. Harchanko	MEMS-0178-US (old number	5923
40575	7590	03/16/2006	EXAMINER STULTZ, JESSICA T	
OLDS, MAIER & RICHARDSON, PLLC PO BOX 20245 ALEXANDRIA, VA 22320-1245			ART UNIT 2873	PAPER NUMBER

DATE MAILED: 03/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/665,530

Applicant(s)

HARCHANKO, JOHN S.

Examiner

Jessica T. Stultz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 January 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group II, claims 15-23, in the reply filed on January 11, 2006 is acknowledged. Claims 1-14 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group I, there being no allowable generic or linking claim.

### ***Double Patenting***

Claim 23 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 22. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Objections***

Claim 15 is objected to because of the following informalities: claim 15, line 1, "device comprising." should be "device comprising:". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

Claims 20-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, in claims 20-23 the phrase "the size of" is not clear since it is not clear from the claims, specification, or drawings what dimensions of the optical element constitutes the size of the element. Based on what is disclosed in the specification and drawings

it is assumed that the size constitutes the "thickness, width, length, or depth" of the optical elements (this being the assumed meaning for purposes of examination).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 15-16, 18, and 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Chiu et al US 7,006,426, herein referred to as Chiu et al '426.

Regarding claim 15, Chiu et al '426 discloses a multi-optical element device comprising: at least one reference optical element (Column 1, lines 28-39 and Column 2, lines 12-31, wherein the reference optical element is one of the lens elements "12", Figures 1-4); a mounting system, wherein the mounting system is formed by etching a substrate to form a recess to receive a reference optical element (Column 2, lines 1-11 and Column 2, line 54-Column 3, line 8, wherein the mounting element "20" is etched to form recesses "48" and "50" in base elements "22", Figures 1-4), where said recess at least partially conforms to the shape of the reference optical element (Column 2, lines 1-11 and Column 2, line 54-Column 3, line 8, wherein the recesses "48" and "50" are shaped to conform to the shape of extensions "44" and "46" of lens element "12", Figure 4), and where the reference optical element is attached to the recess in the substrate (Column 2, lines 1-11 and Column 2, line 54-Column 3, line 8, wherein the lens elements "12" are attached and aligned with the substrate "20" by connection with the recesses

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“48” and “50”, Figure 4), the mounting system contains an etched substrate forming structures upon which optical devices can be attached (Column 2, lines 1-11 and Column 2, line 54-Column 3, line 8, wherein the mounting element “20” includes structures “22” upon which lens elements “12” are attached, Figures 1-4); and at least a first optical element attached to a predetermined structure of the etched structures (Column 2, lines 1-11 and Column 2, line 54-Column 3, line 8, wherein additional lens elements “12” are attached to the structures “22”, Figure 4).

Regarding claim 16, Chiu et al ‘426 further discloses that the reference optical element and/or the first optical element are made from glass (Column 1, lines 28-39, wherein the lens elements “12” are made from glass, Figures 1-4).

Regarding claim 18, Chiu et al ‘426 further discloses that the etched structure is covered with a filling compound to change the index of refraction (Column 2, line 32-Column 3, line 8, wherein the etched structures “22” are coated with thin films to change the reflectivity, i.e. change the refractive index, and wherein the structures are also coated with an adhesive for bonding).

Regarding claims 20-23, Chiu et al ‘426 further discloses that the thickness of the reference and first optical elements are between several millimeters and 1 nanometer (Column 1, lines 40-53, wherein the thickness of the wafer used to form lens elements “12” is 0.75 mm, Figures 1-4).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al '426 as applied to independent claim 15 above.

Regarding claim 17, Chiu et al '426 discloses a multi-optical element as shown above, but does not specifically disclose that the optical elements are made from GaP. However, it is well known in the art of optical elements in semiconductor devices to be made of GaP for the purpose of making elements with narrow band gaps and good lattice conformity. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made for the optical elements of Chiu et al '426 to be made from GaP since it is well known in the art of optical elements in semiconductor devices to be made of GaP for the purpose of making elements with narrow band gaps and good lattice conformity.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al '426 as applied to independent claim 15 above, and further in view of Hafner et al US 6,716,409, herein referred to as Hafner et al '409.

Regarding claim 19, Chiu et al '426 discloses a multi-optical element including a filling compound as shown above, but does not specifically disclose that the filling compound is Epoxy-Master Bond EP19HT. Hafner et al '409 teaches of using an optical adhesive, specifically Epoxy-Master Bond EP19HT, join nanotubes to a silicon material (Column 11, lines 1-25, wherein nanotubes are joined to silicon with EP19HT) for the purpose of providing an adhesive that will not cure with exposure to air or water and can withstand exposure to water once cured (Column 11, lines 1-25,). Therefore it would have been obvious to one having ordinary skill in

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the art at the time the invention was made for the filling compound of Chiu et al '426 to be Epoxy-Master Bond EP19HT since Hafner et al '409 teaches of using an optical adhesive, specifically Epoxy-Master Bond EP19HT, join nanotubes to a silicon material for the purpose of providing an adhesive that will not cure with exposure to air or water and can withstand exposure to water once cured.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hagen US 6,949,405, Ouchi US 6,829,398, and Ford et al US 5,963,684 are cited since they read on the claimed references. However, these references were not used in the above rejections since additional rejections would have been repetitious. Specifically, these references disclose optical elements attached to bases that have been etched to form recesses.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica T. Stultz whose telephone number is (571) 272-2339.

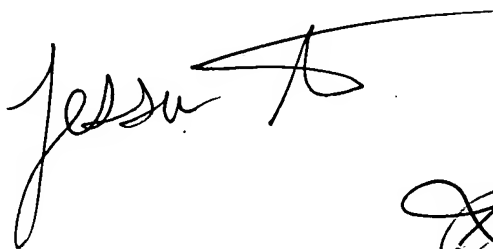
The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jessica Stultz  
Patent Examiner  
AU 2873  
March 9, 2006



**RICKY MACK**  
**SUPERVISORY PATENT EXAMINER**